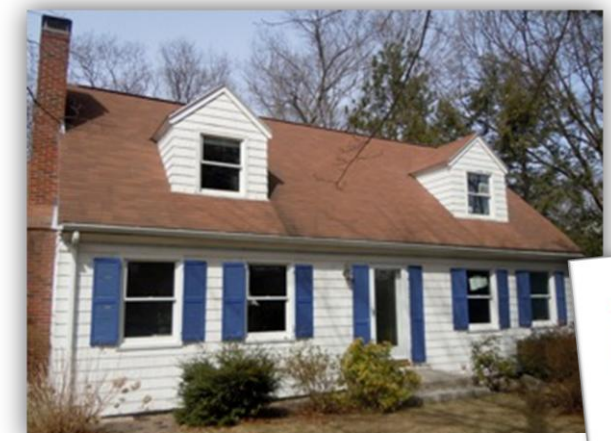
ENERGY EFFICIENCY SUCCESS STORY | 2013

BURNHAM FAMILY HOME

Prepared by Concord Light, your local electric utility



Luke and Nancy live with their two children in this 1963 Cape on Bristers Hill Road near the high school

Energy Audit

Concord Light performed a no-cost energy audit of the Burnhams' home.

Recommended Upgrades Included:

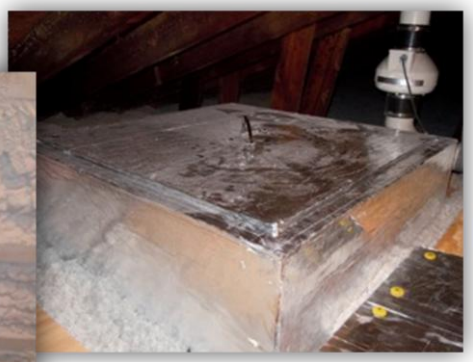
- Attic Improvements
  - Sealing Leaks and Cracks
  - Replacement of Old Fiberglass Batts in Main Attic with Blown-In Cellulose Insulation
  - Construction of Sealed Box Around Whole House Fan
  - Sealing and Insulation of Area Behind Kneewalls
- Sealing and Insulation of Rim Joists in Basement

"We wanted to improve the energy efficiency of our home in order to save on oil heating costs and reduce pollution and our contribution to global warming. We also wanted to make our house more comfortable. We had some drafts, cold spots and cold rooms." -- Luke

Attic Improvements

The old fiberglass batts in the attic were removed in order to expose and seal up leaks and cracks where warm air was traveling into the attic through wiring holes, around plumbing vents, through interior walls, etc. The fiberglass batts had also become matted and compressed in places and fit poorly within the joists -- all factors that compromised its insulating value. The cellulose that replaced the fiberglass flows into all of the nooks and crannies, leaving virtually no gaps.

*The areas behind the kneewalls are exposed to the outdoors via soffit vents. For this reason, a 2nd floor bedroom adjacent to the kneewall has always been cold. The spray foam seals off air leaks **and** insulates, isolating the living space from the cold outdoor air.*

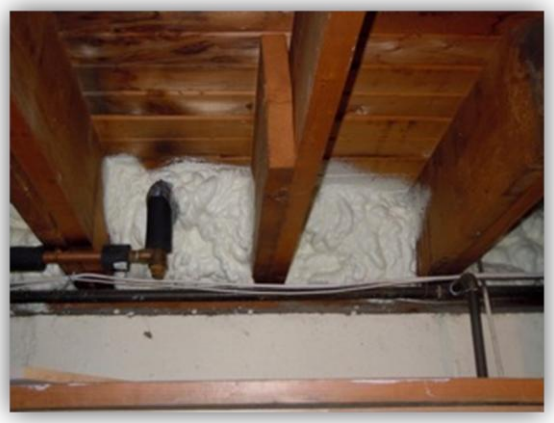


The sealed box around the whole house fan prevents warm air from migrating through the fan to the attic during the cold months. During the summer, the box cover is removed so that the fan can be used to cool the house.

"In addition to cutting our heating costs, we are hopeful that the main attic and attic kneewall insulation will minimize problems with ice dams next winter. Another purpose of the kneewall insulation is to warm the 2nd floor bedroom. We would like to avoid having to install more baseboard heating in that room." -- Luke

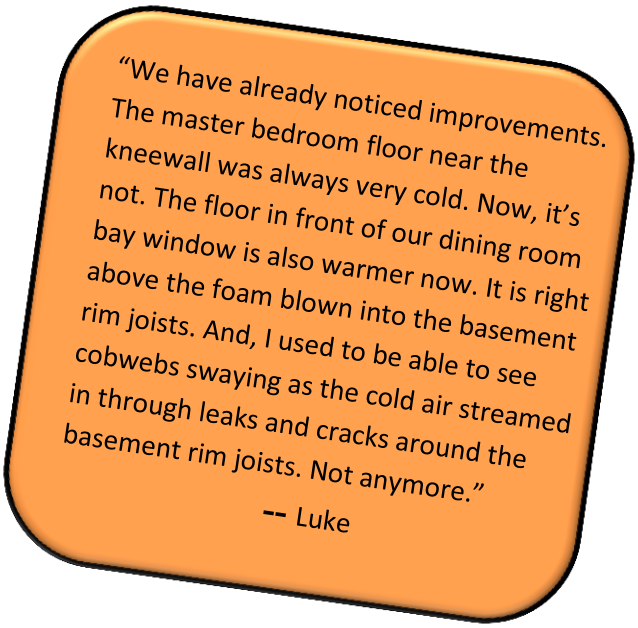
"Insulation and air sealing also keep hot air out during the cooling season. So, we are hoping that the improvements we've made will help us keep the house cooler in the summer, too." -- Luke

Basement Improvements



Spray foam seals air leaks and insulates the rim joists, where the house sits on the foundation.

Total Project Costs:	**$4,000**
Energy Cost Savings:	**The improvements were begun and completed in early March, 2013. Next year, a comparison of 2012-2013 and 2013-2014 winter oil usage, adjusted for weather differences, will provide an assessment of the Burnhams' energy cost savings**



Weatherization Project Notes

- The Burnhams found a reputable contractor by getting a referral from a general contractor they trusted, and by using Angie's List.
- Luke took a hands-on approach. He:
  - educated himself by reading "Insulate and Weatherize" by Bruce Harley, a user-friendly book available through the Minuteman Library system.
  - asked his contractor a lot of questions and specified explicitly in a contract what he wanted done.
- In an effort to balance effectiveness and cost, the Burnhams had open cell spray foam installed. Closed cell spray foam would have provided more insulation, but at double the price.
- All of the weatherization work was completed in 1 ½ days. Spray foam application requires occupants to vacate the home for at least one day, due to health considerations.
- Using a blower door and infrared imaging, a contractor should assess the air tightness of the house just before and just after sealing up leaks and cracks. This ensures that the work has effectively reduced air leakage.

For more information on Concord Light's free home energy audits and energy efficiency rebates, go to concordma.gov/cmlp or contact Jan Aceti at 978-318-3151 or jaceti@concordma.gov.